



SEQUENCE LISTING

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<120> HIV-1 VACCINES AND SCREENING METHODS
THEREFOR

<130> 2570-1-001N

<140> 09/891,609

<141> 2001-06-26

<150> 60/214,608

<151> 2000-06-27

<160> 4

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1941

<212> DNA

<213> Human immunodeficiency virus type 1

<400> 1

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aattacacaa acttaatata caccttaatt gaagaatcgc agaaccaaca agaaaagaat 1860
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<210> 2
<211> 646
<212> PRT
<213> Human immunodeficiency virus type 1

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Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp Lys Glu Ala Thr
35 40 45
Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr Asp Thr Glu Val
50 55 60
His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr Asp Pro Asn Pro
65 70 75 80
Gln Glu Ile Val Leu Glu Asn Val Thr Glu Asn Phe Asn Met Trp Lys
85 90 95
Asn Asn Met Val Glu Gln Met His Glu Asp Ile Ile Ser Leu Trp Asp
100 105 110
Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu Cys Val Thr Leu
115 120 125
His Cys Thr Asn Leu Lys Asn Ala Thr Asn Thr Lys Ser Ser Asn Trp
130 135 140
Lys Glu Met Asp Arg Gly Glu Ile Lys Asn Cys Ser Phe Lys Val Gly
145 150 155 160
Ala Gly Lys Leu Ile Asn Cys Asn Thr Ser Val Ile Thr Gln Ala Cys
165 170 175
Pro Lys Val Ser Phe Glu Pro Ile Pro Ile His Tyr Cys Ala Pro Ala
180 185 190
Gly Phe Ala Ile Leu Lys Cys Asn Asp Lys Lys Phe Asn Gly Ser Gly
195 200 205
Pro Cys Thr Asn Val Ser Thr Val Gln Cys Thr His Gly Ile Arg Pro
210 215 220
Val Val Ser Thr Gln Leu Leu Leu Asn Gly Ser Leu Ala Glu Glu Gly
225 230 235 240
Val Val Ile Arg Ser Glu Asn Phe Thr Asp Asn Ala Lys Thr Ile Ile
245 250 255
Val Gln Leu Lys Glu Ser Val Glu Ile Asn Cys Thr Arg Pro Asn Asn
260 265 270
Asn Thr Arg Lys Ser Ile Thr Ile Gly Pro Gly Arg Ala Phe Tyr Ala
275 280 285
Thr Gly Asp Ile Ile Gly Asp Ile Arg Gln Ala His Cys Asn Ile Ser
290 295 300
Gly Glu Lys Trp Asn Asn Thr Leu Lys Gln Ile Val Thr Lys Leu Gln
305 310 315 320
Ala Gln Phe Gly Asn Lys Thr Ile Val Phe Lys Gln Ser Ser Gly Gly
325 330 335
Asp Pro Glu Ile Val Met His Ser Phe Asn Cys Gly Gly Glu Phe Phe
340 345 350
Tyr Cys Asn Ser Thr Gln Leu Phe Asn Ser Thr Trp Asn Asn Thr Ile
355 360 365

Gly Pro Asn Asn Thr Asn Gly Thr Ile Thr Leu Pro Cys Arg Ile Lys
 370 375 380
 Gln Ile Ile Asn Arg Trp Gln Glu Val Gly Lys Ala Met Tyr Ala Pro
 385 390 395 400
 Pro Ile Arg Gly Gln Ile Arg Cys Ser Ser Asn Ile Thr Gly Leu Leu
 405 410 415
 Leu Thr Arg Asp Gly Gly Lys Glu Ile Ser Asn Thr Thr Glu Ile Phe
 420 425 430
 Arg Pro Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr
 435 440 445
 Lys Tyr Lys Val Val Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Lys
 450 455 460
 Ala Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Val Thr Leu Gly
 465 470 475 480
 Ala Met Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met Gly Ala
 485 490 495
 Arg Ser Leu Thr Leu Thr Val Gln Ala Arg Gln Leu Leu Ser Gly Ile
 500 505 510
 Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Glu Ala Gln Gln His
 515 520 525
 Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Leu Gln Ala Arg Val Leu
 530 535 540
 Ala Val Glu Arg Tyr Leu Lys Asp Gln Gln Leu Leu Gly Ile Trp Gly
 545 550 555 560
 Cys Ser Gly Lys Leu Ile Cys Thr Thr Ala Val Pro Trp Asn Ala Ser
 565 570 575
 Trp Ser Asn Lys Ser Leu Asp Gln Ile Trp Asn Asn Met Thr Trp Met
 580 585 590
 Glu Trp Glu Arg Glu Ile Asp Asn Tyr Thr Asn Leu Ile Tyr Thr Leu
 595 600 605
 Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn Glu Gln Glu Leu Leu
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 Glu Leu Asp Lys Trp Ala Ser Leu Trp Asn Trp Phe Asp Ile Ser Lys
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 Trp Leu Trp Tyr Ile Lys
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<210> 3
 <211> 1860
 <212> DNA
 <213> Human immunodeficiency virus type 1

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 gtgacagaaa atttaacat gtggaaaaat aacatggtag aacagatgca tgaggatata 240
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 ctacattgca ctaatttcaa gaatgctact aataccaaga gtagtaattg gaaagagatg 360
 gacagaggag aaataaaaaaa ttgctcttc aaggtcgag ctggaaaatt gataaattgt 420
 aacacccatc tcattacaca ggcctgtcca aaggtatcct ttgaaccaat tccccatacat 480
 tattgtgccc cggctggttt tgcgattcta aagtgtaatg ataagaagtt caatggatca 540
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 actcaattgc tgttaaatgg cagtctagca gaagaagggg tagtaattag atctgaaaat 660
 ttcacagaca atgctaaaac tataatagta cagctgaagg aatctgtaga aattaattgt 720
 acaagaccta acaataatac aagaaaaagt ataaactatag gaccggggag agcattttat 780

gcaacaggag acataatagg agatataaga caagcacatt gtaacattag tggagaaaaaa 840
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atagtctta agcaatcctc aggagggac ccagaaattg taatgcacag ttttaattgt 960
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gataagtggg caagtttgc gaattggttt gacatatcaa aatggctgtg gtatataaaa 1860

<210> 4
<211> 619
<212> PRT
<213> Human immunodeficiency virus type 1

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Trp Lys Glu Ala Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala
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Tyr Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro
35 40 45
Thr Asp Pro Asn Pro Gln Glu Ile Val Leu Glu Asn Val Thr Glu Asn
50 55 60
Phe Asn Met Trp Lys Asn Asn Met Val Glu Gln Met His Glu Asp Ile
65 70 75 80
Ile Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro
85 90 95
Leu Cys Val Thr Leu His Cys Thr Asn Leu Lys Asn Ala Thr Asn Thr
100 105 110
Lys Ser Ser Asn Trp Lys Glu Met Asp Arg Gly Glu Ile Lys Asn Cys
115 120 125
Ser Phe Lys Val Gly Ala Gly Lys Leu Ile Asn Cys Asn Thr Ser Val
130 135 140
Ile Thr Gln Ala Cys Pro Lys Val Ser Phe Glu Pro Ile Pro Ile His
145 150 155 160
Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys Cys Asn Asp Lys Lys
165 170 175
Phe Asn Gly Ser Gly Pro Cys Thr Asn Val Ser Thr Val Gln Cys Thr
180 185 190
His Gly Ile Arg Pro Val Val Ser Thr Gln Leu Leu Leu Asn Gly Ser
195 200 205
Leu Ala Glu Glu Gly Val Val Ile Arg Ser Glu Asn Phe Thr Asp Asn
210 215 220
Ala Lys Thr Ile Ile Val Gln Leu Lys Glu Ser Val Glu Ile Asn Cys
225 230 235 240
Thr Arg Pro Asn Asn Asn Thr Arg Lys Ser Ile Thr Ile Gly Pro Gly

245	250	255
Arg Ala Phe Tyr Ala Thr Gly Asp Ile	Ile Gly Asp Ile Arg Gln Ala	
260	265	270
His Cys Asn Ile Ser Gly Glu Lys Trp Asn Asn Thr Leu Lys Gln Ile		
275	280	285
Val Thr Lys Leu Gln Ala Gln Phe Gly Asn Lys Thr Ile Val Phe Lys		
290	295	300
Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Met His Ser Phe Asn Cys		
305	310	315
Gly Gly Glu Phe Phe Tyr Cys Asn Ser Thr Gln Leu Phe Asn Ser Thr		
325	330	335
Trp Asn Asn Thr Ile Gly Pro Asn Asn Thr Asn Gly Thr Ile Thr Leu		
340	345	350
Pro Cys Arg Ile Lys Gln Ile Ile Asn Arg Trp Gln Glu Val Gly Lys		
355	360	365
Ala Met Tyr Ala Pro Pro Ile Arg Gly Gln Ile Arg Cys Ser Ser Asn		
370	375	380
Ile Thr Gly Leu Leu Leu Thr Arg Asp Gly Gly Lys Glu Ile Ser Asn		
385	390	395
Thr Thr Glu Ile Phe Arg Pro Gly Gly Asp Met Arg Asp Asn Trp		
405	410	415
Arg Ser Glu Leu Tyr Lys Tyr Lys Val Val Lys Ile Glu Pro Leu Gly		
420	425	430
Val Ala Pro Thr Lys Ala Lys Arg Arg Val Val Gln Arg Glu Lys Arg		
435	440	445
Ala Val Thr Leu Gly Ala Met Phe Leu Gly Phe Leu Gly Ala Ala Gly		
450	455	460
Ser Thr Met Gly Ala Arg Ser Leu Thr Leu Thr Val Gln Ala Arg Gln		
465	470	475
Leu Leu Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile		
485	490	495
Glu Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Leu		
500	505	510
Gln Ala Arg Val Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln Gln Leu		
515	520	525
Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr Thr Ala Val		
530	535	540
Pro Trp Asn Ala Ser Trp Ser Asn Lys Ser Leu Asp Gln Ile Trp Asn		
545	550	555
Asn Met Thr Trp Met Glu Trp Glu Arg Glu Ile Asp Asn Tyr Thr Asn		
565	570	575
Leu Ile Tyr Thr Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn		
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Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu Trp Asn Trp		
595	600	605
Phe Asp Ile Ser Lys Trp Leu Trp Tyr Ile Lys		
610	615	